

## **APPENDIX    A**

### **SCOPE OF WORK**

STATEMENT OF WORK  
FOR

SEISMIC EVALUATION OF BUILDING 1003, OAS

Project WMSJ 96-1054

ONIZUKA AIR STATION  
SUNNYVALE, CALIFORNIA

AUGUST 1997

Prepared by:  
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United States Air Force  
ONIZUKA AIR STATION  
SUNNYVALE, CALIFORNIA

# ARCHITECT-ENGINEER SERVICES

Project No. WMSJ 96-1054

## SEISMIC EVALUATION OF BUILDING 1003

at

ONIZUKA AIR STATION

13 August 1997

### 1.0 OBJECTIVE

The objective of this study is to initially evaluate building #1003 at Onizuka Air Station for potential earthquake-related risk to human life posed by a building or building component. This portion of the study is to be used in the overall analysis and inventory of OAS buildings to comply with Executive Order 12941, Seismic Safety for Existing Federally Owned or Leased Buildings. The form and content of the evaluation shall follow the method of the NEHRP Handbook for the Seismic Evaluation of Existing Buildings (FEMA-178/June 1992) as modified by Air Force Engineering Technical Letter (ETL) Structural Evaluation of Existing Buildings for Seismic and Wind Loads. Geologic hazards, the building's structural system, foundation, and non-structural elements shall be evaluated. The results of the initial evaluation shall be presented in a report which lists those elements that do not meet the basic acceptance criteria, compares the demand to the capacity of those elements, assesses the consequences of the failure of the elements with high demand to capacity ratios, and states the Architect-Engineer (A-E's) judgment of the potential life safety hazard. In addition, this study will evaluate geologic hazards of building #1003 and provide a "program level" estimate of the cost for the recommendations to rehabilitate or upgrade building.

### 2.0 SCOPE

Work scope and the evaluation criteria are contained in the NEHRP Handbook for the Seismic Evaluation of Existing Buildings (hereafter referred to as FEMA-178) except as modified by ETL Structural Evaluation of Existing Buildings for Seismic and Wind Loads. The scope of the total A & E efforts shall consist of, but not be limited to, a complete site survey and investigation of building #1003. The A-E shall provide all services, tools, equipment, and transportation required to evaluate building #1003 and to prepare the written report. The final report shall address overall conceptual seismic status of building #1003 with respect to structure, foundation, site geology, and non-structural elements. The final report

### 3.0 REFERENCE DOCUMENTS

A) The following documents and publications referenced in these documents form a part of this statement of work:

3.1 Inventory, Screening, Prioritization, and Evaluation of Existing Buildings for Seismic Risk, Engineering Technical Letter, Air Force Civil Engineering Support Agency, 18 August 1993.

3.2 Structural Evaluation of Existing Buildings for Seismic and Wind Loads, Engineering Technical Letter, Air Force Civil Engineering Support Agency, September 1994 (Draft).

3.3 Seismic Design for Buildings, AFM 88-3, Chap 13, October 1992.

3.4 ICSSC RP 5/October 1995, ICSSC Guidance on Implementing Executive Order 12941 on Seismic Safety of Existing Federally Owned or Leased Buildings, U.S. Department of Commerce, Building and Fire Research Laboratory, National Institute of Standards and Technology.

B) The following documents are to be used as reference only (not to be compiled with specifically):

3.5 FEMA 156/July 1988, Typical Costs for the Seismic Rehabilitation of Existing Buildings, Volume I - Summary. Federal Emergency Management Agency.

3.6 FEMA 157/September 1988, Typical Costs for the Seismic Rehabilitation of Existing Buildings, Volume II - Supporting Documentation. Federal Emergency Management Agency.

3.7 FEMA 178/June 1992, NEHRP Handbook for the Seismic Evaluation of Existing Buildings, Federal Emergency Management Agency.

3.8 FEMA 222/January 1992, NEHRP Recommended Provisions for the Development of Seismic Regulations for New Buildings, Part 1: Provisions, Federal Emergency Management Agency. (Includes Maps).

3.9 FEMA 223/January 1992, NEHRP Recommended Provisions for the Development of Seismic Regulations for New Buildings, Part 2: Commentary, Federal Emergency Management Agency.

### 4.0 BACKGROUND

Onizuka Air Station is a satellite testing and control facility located at Mathilda Avenue and Moffett Park Drive in Sunnyvale, California adjacent to the Lockheed Martin Company. The buildings to be evaluated is located on the 22 acre campus of Onizuka Air Station. Building #1003 is the "Risk Group A" building on Onizuka Air Station. This building was selected for evaluation based on screening criteria in ETL 93.1

## 5.1 Geotechnical Evaluation

Evaluate the Onizuka Air Station site for the geologic hazard listed in FEMA-178, Section 9.3. This is a requirement of ETL 93-3 (paragraph 5.7.1). The intent of this portion of the evaluation is to identify geologic hazards that might affect the building included on this study, on the basis of the geotechnical characteristics as shown on existing documents. The evaluation shall be a minimal assessment of the property to complete the ICSSC database using existing site data. No soil borings or other underground soil samplings are needed nor requested for the purpose of this study.

## 5.2 Structural Evaluation

For building #1003, address the general set of evaluation statements or the appropriate statement(s) for the common building type(s) applicable to the building. This evaluation shall be of a conceptual nature. The evaluation statements for geotechnical hazards/foundations and non-structural elements shall be addressed for the building. Modifications to work scope or criteria in references are identified by section. If the statement "No additional requirements" appears below the task heading, follow the references' guidance as written. Other information such as available data and constraints affecting the work are included in the following sections.

## 5.3 Site Visit and Data Collection

5.3.1 Access to the building at Onizuka Air Station is "restricted." See Section 8.3 of this Statement of Work for requirements for access to "restricted" areas.

5.3.1.1 Photographing is prohibited on Onizuka Air Station without permission from station Security Police. Notify the Government's engineer two weeks in advance to arrange for permission to take photographs or to have Bertha Roman take photographs.

5.3.1.2 Geotechnical reports for Onizuka Air Station are available for review in the Engineering office. A site specific response spectra has also been developed for the Onizuka Air Station.

5.3.1.3 The record drawings for building #1003 at Onizuka Air Station to be evaluated are in the Engineering office. The current configuration of this building is depicted in various sets of drawings that are complete. There is no need to produce as-built drawings for this study.

## 5.3.2 Selection and Review of Evaluation Statements

No additional requirements.

## 5.3.3 Follow-up Field Work

Fieldwork is limited to that work necessary to address the evaluation statements which can be accomplished using non-destructive testing methods.

Assess the relative importance of deficiencies on a conceptual basis. This assessment will be upgraded in the future to a full evaluation as required by FEMA-178 Section 2.4.12, which is not in this scope of work at this time.

### 5.3.5 Final Evaluation

No additional requirements.

### 5.3.6 The Final Report

Prepare a final evaluation report with sections for the building and sections for their geologic hazard evaluation at Onizuka Air Station. The building sections shall include conceptual and "qualitative answers". The final report shall have basic conceptual recommendations for priority for mitigating deficiencies. The recommended priority shall cover the building evaluated. Include recommendations for mitigation and possible approaches to rehabilitate the building and the program level cost estimate in the report. The final report will not be in full compliance with FEMA 178/June 1992 since this will be the scope of final work. Include in the final report a table of information which matches the table format in the ICSSC Guidance on Implementing EO 12941. This table must be prepared and presented using Microsoft Excel, version 5.0a (see ICSSC RP5).

## 6.0 DELIVERABLES

Submit three copies of the report for government review. A "review" and a "revised" version of the report shall be submitted. The "revised" version shall include the corrections, clarifications, and additions resulting from the Government review of the report.

## 7.0 REVIEWS AND MEETINGS

### 7.1 Reviews

The A-E shall submit the report for Government review. The Government will return written comments to the A-E ten working days after receiving the deliverables. The A-E shall provide written responses to comments and revise the report if necessary. Responses to comments and the revised report shall be submitted within 15 days after receiving the Government's comments. The Government will perform a back-check review to insure all comments have been addressed or incorporated in the final report. If a lack of compliance is noted, an additional back-check review and deliverable will be required without additional cost to the Government.

### 7.2 Meetings

Government to ascertain the progress of the project.

## 8.0 SPECIAL CONSIDERATIONS

### 8.1 Contract Document Verification and Quality Control

The A-E shall establish a system of in-house peer reviews for quality control of the evaluations, including calculations, to ensure compliance with the task's requirements.

### 8.2 Schedules and Reviews

#### 8.2.1 Schedules

The work shall be completed with 90 calendar days. Within 15 working days after the execution of delivery orders, the A-E shall submit a schedule for all submittals, Government reviews, and A-E revisions. The Government will provide the submittal delivery date with each delivery order. A-E will not modify the schedule after approval unless the revision is approved by the Government.

Progress schedules shall be submitted every two weeks clearly indicating tasks completed and the percent of the work complete. This information shall also be provided to the Government's Engineer in a telephone conference.

#### 8.2.2 Submittal Reviews

The A-E shall allow ten working days from the date of Government receipt for the Government to review the submittal.

### 8.3 Access and Security

Onizuka Air Station is engaged in the operational testing and control of Department of Defense satellites. Access to many areas of Onizuka Air Force Base is restricted. Advance notice to the Base Civil Engineer is required to arrange access and security escorts. This may require furnishing some personal data on the personnel requiring access and may lead to some inconvenience or access delays. Access to environmentally sensitive or contaminated areas will be arranged by the Base Civil Engineer after areas are cleared from potential health risks to A/E staff.

### 8.4 Engineering Calculations

Calculations required for the evaluation shall be prepared and stamped by a professional engineer licensed in the discipline related to the work.

### 8.5 Administrative Service

title, current project phase estimated and actual completion dates, project estimated and actual completion dates and remarks regarding progress.

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